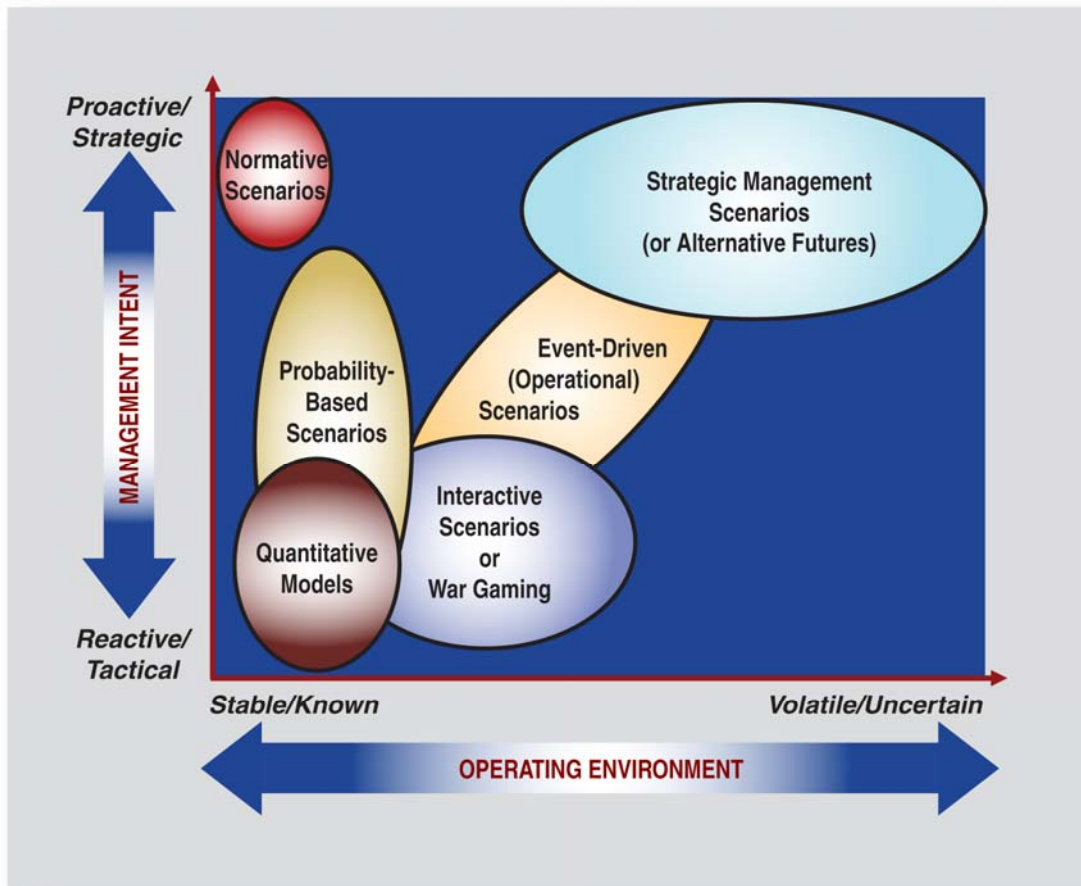


Types of Scenario Planning

By Charles Thomas

The term “scenario planning” encompasses a surprisingly diverse range of activities. While there are many potential schemes for categorizing these activities, the chart below presents a fairly comprehensive view of them, and indicates – if imperfectly – the relationships among the various approaches. Indeed, a purist would argue that some of these categories are not truly scenario planning at all. However, the term is commonly applied to all of the activities in various settings and having them all in one place allows for useful comparisons. Even the category names used are not universally accepted across the scenario consulting industry. In fact, there are no (or at least very few) standard terms of reference for most of the concepts employed by scenario planners. Below is a closer look at the various types of scenario planning, to what business and organizational challenges they may be applied, and what limitations and challenges pertain to each approach.



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QUANTITATIVE MODELS

Some notion of “scenarios” is found in nearly all forms of mathematically based market forecasting and financial models. (Excel itself contains a “scenario” function, which allows users to input alternative assumptions to generate alternative results.) In such modeling and forecasting functions, “the answer” is expressed in mathematical terms, such as revenue projection, return on invested capital, market share, etc. Among the most common “strategic” uses of this tool is in the field of investment banking, and, in particular, mergers and acquisitions, where an integrated financial representation of two independent businesses models is examined for synergies, costs, and – for publicly traded companies – share price accretion or dilution. These financial models are said to enable scenario analysis when they allow for the presentation of “Base Case,” “Best Case,” and “Worst Case” versions of the model outputs based on altering a limited number of variables that can be readily manipulated. These versions are referred to as “scenarios,” as in “this is the best case scenario for this transaction.” In the world of investment banking, such a model is considered strong or elegant to the extent that changes in the driving variables dynamically alter all of the model’s outputs allowing for rapid “scenario analysis.” “Quantitative scenarios” are also widely used to develop annual business forecasts. These models implicitly assume that (a) the key variables are known, and that (b) the relationships between them are fixed.

Applications: Many firms have quantitative cultures and are comfortable only when they see a hard number attached to an option or goal. Since most of the inputs to quantitative models are also the variables used in daily business activities (cost of capital, cost of product distribution, competitor spending on R&D, taxes, etc.), firm leadership typically embraces the results with little argument. Results tie well into operating plans and provide an aura of accuracy. Also, there is a definite need to create dynamic financial statements to meet financial reporting requirements – for example, pro forma financial statements. Thus, these models are a necessary and powerful tool for managing the financial intricacies of the modern corporation.

Limitations: Even the best, most sophisticated quantitative models make assumptions about the future state (or values) of key independent variables. For many short-term forecasting activities (for instance, up to a few fiscal quarters), these assumptions are often reasonable to make. But farther out in time (or even in some near-term situations), when complexities increase and discontinuities grow more likely, quantitative models tend to grow less

reliable. Most mathematical models simply cannot reliably handle unanticipated market discontinuities, such as a new consumer fad, an unprecedented financial event, or a natural disaster. Therefore, these kinds of “scenarios” do not challenge conventional wisdom or force you to consider new business models or new or unprecedented customer needs. Additionally, quantitative models tend to take on a life of their own, with hidden assumptions and inner workings known to, or understood by, just a few individuals who most frequently interact with the models, and not necessarily all those involved in making the decisions the models are intended to support. As such, overextending the application of this approach and lack of transparency with its use can both give rise to flawed assumptions about future market dynamics, and result in a false sense of confidence about model precision and reliability.

PROBABILITY-BASED SCENARIOS

Assigning probabilities to “scenarios” is unusual in the business world and is found only with quantitative models and with scenarios in this category. Probability-based scenarios are a hybrid form of scenario planning whose foundation is a mathematical treatment of all variables; yet a deliberate effort is made to identify all assumptions and to force a wide variability on the key trends and variables. This approach uses a large cross-impact matrix to form the scenarios. All the key business drivers are listed as both row and column headings. Every cell of the matrix is examined for likelihood and for the business impact of the business driver cross-impact that forms that cell. If there are 50 business drivers, then there are 50 columns in the matrix and 50 potential “scenarios” to be summed. Each column is made up of slightly different sets of trend cross-impacts. The columns are “summed” for the highest probability combinations and the top four or five are used in subsequent analysis.

Applications: Engineering firms and utilities have tended to be the principal users of probability-based scenarios, although this form of scenario planning has been little used since the 1980s. They are drawn to the quantitative expression of business futures and find that this approach can make use of quantitative trends and business statistics that they use in their daily work. The effort taken to make decisions about each trend cross-impact stimulates participants’ thinking about unlikely combinations of events that may form their future operating environment. In industries such as utilities, where (at least before deregulation) just a handful of numbers actually did define the critical business parameters, this is a

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comfortable method of planning that seems firmly rooted in “business realities.”

Limitations: Probability-based scenarios contain most of the weaknesses of quantitative or spreadsheet models (but do a better job of mitigating the over-simplifications of pure extrapolation). The quantitative output often masks the plethora of subjective qualitative judgments involved in setting the probabilities. In addition, executing a trend cross-impact matrix can be a time-consuming and somewhat mechanical process that is at odds with energized creative thinking. The process relies on the assumption that many of the trends of today are the important trends of the future and therefore the cross-impacts will unearth all critical challenges. Because probabilities are assigned to the scenarios, there is a tendency to assume that the highest-scoring scenario is the most likely future and to place uneven bets on the characteristics of that one image of how the future will turn out. Finally, there is seldom a narrative developed with the scenarios. Without the power of a story to carry the scenarios it can be very difficult for people not involved in the cross-impact assessments to understand or believe the scenarios.

INTERACTIVE (“WAR GAMING”) SCENARIOS

This version of scenario planning is more commonly referred to as “war gaming” or simply, “gaming.” In its purest form, gaming does not so much describe a potential future as it does the rules of interaction among select variables or actors that help shape the future. Games tend to be highly “action oriented.” There are two sides or opponents (often playing in separate rooms), there are referees who moderate the game, and both follow a play book that sets the initial conditions of the game – the scenario – and unanticipated events that are introduced to the players throughout the game. Each team acts and reacts to defeat the other team. The military and intelligence communities tend to use gaming more extensively than does the business community.

A game is generally based on one description of a single future operating environment. Typically, gaming scenarios are only a few years out (sometimes a few months out) and are used to examine a narrow strategic, operational or tactical set of issues. Therefore, they tend to be narrow in scope, although not always. Over several years, many different gaming scenarios may be developed and thus over time many interpretations of the future may be used to challenge thinking. In some applications, a set of strategic management scenarios (described in following pages) might set the backdrop for situational gaming scenarios.

The most common use of games in the private sector, however, is not in strategic planning, but in the marketing, business intelligence or competitor analysis arenas. A company intends to introduce a new approach to product distribution next year, for example. Before launch, even before the new approach is finalized, it may develop a set of games to better evaluate how the competition, the consumer, or perhaps the government will respond. Game results might steer the company to do things in a slightly different way that might, for example, foreclose a competitor’s response options.

Applications: Gaming can bring the competitive landscape to life. With proper referees and rules, the game can mimic the future market conditions that the firm may face and executives can gain important tactical insights. Gaming can also be a valuable training tool. If the competition is “played,” then the scenario can contain the give and take of the marketplace and decision-makers can see the results of their decisions in near-real time. Once the game is developed, it can be run with many different players or with slightly different assumptions – all options offer the opportunity for learning more about the sensitivity of a decision to be taken. Regardless of the nominal reason for the game, players often find that they have gained a greater degree of understanding about their business and about the qualities of the other players. They can also develop the ability to respond more nimbly to competitor initiatives.

Limitations: Games are about interactions within an existing marketplace or “mission space.” “Played” in a vacuum, they tend to miss consideration of potential shifts in the broader operating environment. Games do not always make a good foundation for strategic thinking. If games are to be repeatable and rigorous, then they have to have a well-developed rules structure that is followed carefully each time. Game players, however, often find that memorizing the rules is more work than the game and the rules tend to destroy the sense of “reality” that the games hope to mimic. Games are typically complex. To make them more manageable, there is a tendency to limit the amount of uncertainty the players will face. That means that the gamers are relying on a base of common knowledge about how the business works today. In other words, just making the game work often means that you cannot introduce significantly challenging interpretations of your background operating conditions. (Note: These “weaknesses” apply to gaming as “strategy scenarios.” These same weaknesses do not apply to the use of gaming for more operational or tactical decision making and analysis, for which games are often superb tools.)

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EVENT-DRIVEN (OR OPERATIONAL) SCENARIOS

Event-driven scenarios are among the most common form of scenario planning that organizations undertake *without* external assistance. Event-driven scenarios and strategic management scenarios (see below) can be easily confused in discussion and literature; yet they are profoundly different. Event-driven scenarios fall in the gap between gaming and strategic management (or alternative futures) scenarios and share common elements with both. Event-driven scenarios tend to be about the impact of an event, action or dilemma within the context of the immediate or near-term business setting. However, the *impact* of that event may have definite strategic implications. The operational context of event-driven scenarios is typically near term, but the strategic context can be long term. For example, an event-driven scenario might be crafted about the merger of two rival firms or the marketing of a new technology-based product by a competitor. In the public setting, an event-driven scenario might be, “What happens if a class five hurricane hits New Orleans?” The intent of this approach tends to be about how to anticipate, prepare for, react to, or prevent such an event. The questions asked can be, “How do we react if such an event happens to us?” or “What are the implications for our products if this event happens?” As long as the time horizon for action is short (that is, as long as you can reasonably assume that fundamental business conditions will remain as is), this can be a very valuable decision-making tool.

Applications: Event-driven scenarios tend to be tied directly to “real-world” problems and narrow ranges of uncertainty. There is seldom any dispute among executives that the scenario is relevant and that the decisions taken as a result will be executable. Since event-driven scenarios are typically near term and the subject matter is usually the industry sector in which the firm operates, specialized expertise in larger global forces for change is not required. Therefore, firms can choose to do this using internal resources and in-house expertise. Event-driven scenarios are generally easy to produce once the “event” is agreed upon; therefore, project scheduling and budgets are seldom an issue.

Limitations: Event-driven scenarios are not always well suited to be strategic tools; yet, because the *implications* of the work can be strategic, they are often used to help formulate strategy. There is a critical pitfall with this practice. Event-driven scenarios cannot provide overlapping coverage of the uncertainties and ambiguities required to capture the full range of future uncertainty. They cannot do this because they are typically selected to illuminate one familiar (albeit difficult) problem. Mistakenly, some firms

believe that using five or six event-driven scenarios will “cover the strategic waterfront.” Event-driven scenarios tend to operate within the organization’s “comfort zone.” That is not to say that the problems addressed are comfortable ones, but rather that the scenarios do not challenge conventional assumptions about how the industry works. (Note: the limitations discussed here refer to the use of event-driven scenarios for strategic planning purposes only. Event-driven scenarios have had a long and successful history in the tactical/operational arena. However, most of those uses are confined to military, public health and public safety organizations. Their use can provide a decision maker with a set of potentially applicable pre-digested policy and operational options.)

NORMATIVE SCENARIOS

Normative scenarios are less frequently used today than was the case in the 1960s and 1970s. In some ways a normative scenario can be thought of as a cross between a scenario environment and a vision statement. Normative scenarios describe what an organization wants to be or the environment that emerges. Normative scenarios are less of an objective planning document than a goals statement. However, instead of the internal company goals in a vision statement, the goals are usually cast in terms of the changes in the operating environment that the organization would like to see come about. A normative scenario provides a target list of activities for manipulating the organization’s operating environment. Sometimes firms will combine some other form of scenario planning with normative scenarios. When an organization thinks it has learned (from other types of scenario planning) where the leverage points are in their business setting, it may craft a normative scenario that provides a kind of summation document of the changes that it might be able to influence.

Applications: Normative scenarios can provide a useful “story” that brings alive the vision and goals of a company – in that sense they are an excellent communications tool. As an adjunct to a vision statement, a normative scenario can focus attention on those things in the external environment that are within corporate “reach” and will have an impact on realizing the vision. It can also help focus an organization’s lobbying efforts. Normative scenarios can be developed easily with internal resources and, indeed, only a few people.

Limitations: It is difficult to make anyone not part of the initial scenario development take normative scenarios as a serious planning tool. There is no “objective” mechanism or process to co-opt others into the vision. One person’s

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very serious normative scenario is another person's silly fantasy and it is hard to get over that hurdle. Normative scenarios are about articulating the "what." They have very little to contribute to the "how" or "why."

STRATEGIC MANAGEMENT (OR ALTERNATIVE FUTURES) SCENARIOS

This is, by far, the most comprehensive form of scenario planning used in the private sector and among military and other government organizations. Strategic management scenarios are alternatively used to create strategy, stress test existing strategic plans, and/or serve as a learning tool and framework to infuse a sense of "strategic intent" in an organization. Strategic management scenarios are developed out of permutations of the macro-level forces for change that define the boundary conditions of an organization's operating environment. In other words, the scenarios are typically defined by trends and forces that are outside the control of the company. Ideally, for planning purposes, these scenario "stories" say as little as possible about the company or its industry. For example, if the planning company is an automotive manufacturer, the scenarios will discuss the role of personal transportation in the consumer's life. They will discuss the attitude of regulatory bodies. They will discuss other modes of transportation. They will *not* mention cars or trucks. Then, the scenarios are used in planning workshops in which it is up to the participants to imagine how their products/services and their firm will accommodate a surprising and unanticipated set of future business conditions. "What must our products and services be like to answer consumer demand in this future?" Or "What must our business model look like to compete successfully?" These are the most challenging scenarios to construct since they must allow the planners full freedom of decision and invention and yet describe a business setting that is meaningful to them.

Applications: Strategic management scenarios are the best scenario approach for challenging the conventional assumptions of an organization or for dealing with high levels of uncertainty and ambiguity. They offer the planners the greatest opportunity for creativity within a rigorous analytical setting. Since they are written about the macro-

level forces for change, they remain a relevant planning tool for many years and because they say as little as possible about the industry, they can be customized to many different uses. In almost all ways this type of scenario planning is the most flexible. Strategic management scenarios make an excellent companion to event-driven scenarios (previously discussed). Let us say you have an event-driven scenario about the merger of two competitors. You can stress test that "event" within *all* of your strategic management scenarios. In that way you are not locked into assuming today's operating setting. You can look for the implications of that merger in a future scenario with a sluggish economy and heavy regulation, a war economy with significant security challenges, a hot economy with little regulation, etc. The combination of the two types of scenario planning can give you a far greater and more in-depth understanding of strategic issues. Generally, strategic management scenario planning can be extended to cover many of the purposes and goals behind war gaming and event-driven scenario planning.

Limitations: Strategic management scenarios tend to take the most fully challenging look at the uncertainties and ambiguities of your business environment. Therefore, they may cause considerable discomfort as they stretch and alter your understanding of what is critical to your growth and success. (Strategic management scenarios are usually an inappropriate planning tool for companies struggling with short-term survival issues.) Many companies find strategic management scenarios difficult to use because of the leap of faith involved in accepting the premise of the planning technique – that a portfolio approach to strategic thinking is better than a forecast. Furthermore, the initial investment in strategic management scenarios is high. The scenarios take more time to develop and usually require significant consulting help. And even with consulting support, the need for a dedicated client "core team" to partner with the consulting team represents a significant commitment of executive time. The scenarios cannot be used piecemeal. If a company stays true to the premise of the technique, then only when all scenarios are used can it be certain of capturing the range of potential opportunities and challenges.

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